PATH; RESPONSE; ROCK; SEDIMENTARY ROCK; SEISMIC DIFFRACTION; SEISMIC VELOCITY COMPUTATN; SEISMIC WAVE PATH; SHALE; STACKING (SEISMIC); TRACE CORRECTION; VERTICAL VELOCITY; WAVE FRONT; WAVE PATTERN

MH - SEISMIC DATA PROCESSING*

CC - GEOPHYSICS

AB - HOMOGENEOUS SCALAR ISOTROPY CAN BE COMPLETELY SPECIFIED BY A SINGLE VELOCITY. ELLIPTICAL **ANISOTROPY** WITH A VERTICAL SYMMETRY AXIS REQUIRES 2 **VELOCITIES**: **VERTICAL** AND HORIZONTAL. FOR SOME PROBLEMS, THESE 2 VELOCITIES MAY NOT BE ENOUGH. IN PARTICULAR, BECAUSE VERTICAL SCALE IS UNKNOWN FOR SURFACE-RECORDED DATA, THE **VERTICAL VELOCITY** IN ELLIPTICAL **ANISOTROPY** GAINS NOTHING OVER ISOTROPY. TWO SUCCESSIVE SCALAR **ANISOTROPIC** APPROXIMATIONS BEYOND ELLIPTICAL **ANISOTROPY** CAN BE USED WHEN MORE INDEPENDENT PARAMETERS ARE NEEDED, BUT THE FULL COMPLEXITY OF TRANSVERSE ISOTROPY IS UNNECESSARY. BOTH APPROXIMATIONS TAKE THE FORM OF SIMPLE RATIONAL POLYNOMIALS. THESE ARE CALLED ANELLIPTIC APPROXIMATIONS TO INDICATE THAT ALTHOUGH THEY ARE NOT ELLIPTICAL, THEY DO SHARE SOME OF ELLIPTICAL **ANISOTROPY**'S USEFUL PROPERTIES. THE FIRST ANELLIPTIC APPROXIMATION IS SPECIFIED BY 3 PARAMETERS: **VERTICAL VELOCITY**, SURFACE NORMAL **MOVEOUT** (NMO) VELOCITY, AND TRUE HORIZONTAL VELOCITY. THE SECOND ANELLIPTIC APPROXIMATION ADDS **BOREHOLE** NMO VELOCITY AS AN ADDITIONAL FREE PARAMETER.

PY - 1993

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3 / 3 TULSA - ©TULS

AN - 475689

TI - **ANISOTROPIC** VELOCITY ANALYSIS FOR LITHOLOGY DISCRIMINATION

AU - BYUN, B S; CORRIGAN, D; GAISER, J E

OS - ARCO OIL & GAS CO

SO - GEOPHYSICS V 54, NO 12, PP 1564-1574, DEC 1989 (13 REFS)

NU - ISSN 00168033

LA - ENGLISH; (ENG)

IT - VERTICAL SEISMIC PROFILING*; ANISOTROPY*; COMPARISON*; EXPLORATION*; GEOLOGY*; GEOPHYSICAL EXPLORATION*; ISOTROPY*; PROFILING*; RAY PATH*; SEISMIC EXPLORATION*; SEISMIC REFLECTION METHOD*; SEISMIC STRATIGRAPHY*; SEISMIC WAVE PATH*; STRATIGRAPHY*; VELOCITY ANISOTROPY*; VELOCITY CONTRAST*; WAVE FRONT*; WAVE PATTERN*; WAVE PHENOMENON*; ALGORITHM; ANOMALY; ATLANTIC OCEAN; BACKGROUND NOISE; BOREHOLE; CARBONATE ROCK; CHART; COMPRESSIONAL WAVE VELOCIT; CORRELATION; DATA; DATA

ACQUISITION; DATA PROCESSING; FORMATION EVALUATION; FORMATION THICKNESS; FOURIER TRANSFORM; FUNCTION (MATHEMATICS); GEOPHYSICAL ANOMALY; GEOPHYSICAL INTERPRETATION; GYPSUM; HIGH ISLAND AREA; HORIZONTAL VELOCITY; INTERPRETATION; INTERVAL VELOCITY; LIMESTONE; LITHOLOGY; MATHEMATICAL ANALYSIS; MATHEMATICS; MEXICO GULF; MINERAL; MOVEOUT; NOISE; NORTH AMERICA; NUMERICAL ANALYSIS; OFFSET; PHASE BEHAVIOR; PHASE CHANGE; PHASE SHIFT; PHASE VELOCITY; RECORD; ROCK; SANDSTONE; SEAS AND OCEANS; SEDIMENTARY ROCK; SEISMIC CORRELATION; SEISMIC DATA PROCESSING; SEISMIC INTERPRETATION; SEISMIC RECORD; SEISMIC VELOCITY; SEISMIC WAVE SOURCE; SHALE; SIGNAL TO NOISE RATIO; STACKING (SEISMIC); SULFATE MINERAL; SYNTHETIC SEISMOGRAM; TABLE (DATA); TEXAS; THICKNESS; TIME; TIME DEPTH DATA; TRAVEL TIME; TRAVEL TIME ANOMALY; UNITED STATES; VELOCITY; VERTICAL VELOCITY; WAVE SOURCE; WAVE VELOCITY; WESTERN US

MH - VERTICAL SEISMIC PROFILING*

CC - GEOPHYSICS

AB - A NEW VELOCITY ANALYSIS TECHNIQUE IS PRESENTED FOR ANALYZING MOVEOUT OF SIGNALS ON MULTICHANNEL SURFACE SEISMIC OR VSP DATA. AN APPROXIMATE, SKEWED HYPERBOLIC MOVEOUT FORMULA IS DERIVED FOR HORIZONTALLY LAYERED, TRANSVERSELY ISOTROPIC MEDIA. THIS FORMULA INVOLVES 3 MEASUREMENT PARAMETERS: THE AVERAGE **VERTICAL VELOCITY** AND HORIZONTAL AND SKEW **MOVEOUT VELOCITIES**. THIS PAPER EXTENDS THE DIX-TYPE HYPERBOLIC MOVEOUT ANALYSIS TO OBTAIN IMPROVED COHERENCE OVER LARGE SOURCE-GEOPHONE OFFSETS FOR A MORE ACCURATE MOVEOUT CORRECTION. COMPARED WITH THE STACKING VELOCITY OBTAINED BY SIMPLE HYPERBOLIC ANALYSIS METHODS, THE 3 VELOCITY PARAMETERS ESTIMATED BY THIS TECHNIQUE CONTAIN MORE PHYSICALLY MEANINGFUL GEOLOGIC INFORMATION REGARDING THE **ANISOTROPY** AND/OR VELOCITY HETEROGENEITY OF THE SUBSURFACE.

PY - 1989

Query/Command : his

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File : TULSA

SS  Results
  1        27   POLAR 2D ANISOTROP???
  2    120052   SEISMIC OR BOREHOLE
  3        24   1 AND   2
  4       942   VERTICAL 3D VELOCIT???
  5         6   3 AND   4
  6       163   ACUTE 2D ANGLE
  7       863   VERTICAL 2D VELOCIT???
  8         1   1 AND   6
  9       208   MOVEOUT 2D VELOCIT???
 10        45   4 AND   9
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4 / 6 TULSA - ©TULS

AN - 712908

TI - CONVERTED-WAVE MOVEOUT AND PARAMETER ESTIMATION FOR TRANSVERSE ISOTROPY

AU - LI, X Y; YUAN, J

OS - BRITISH GEOLOGICAL SURVEY; EDINBURGH UNIV

SO - 61ST EAGE CONF (HELSINKI, FINLAND, 1999.06.07-11) EXTENDED ABSTR V 1, PAP NO 4-35, 1999 (ISBN 90-73781-10-8; 4 PP; 7 REFS; ABSTRACT ONLY) (AO)

NU - ISBN 9073781108

LA - ENGLISH; (ENG)

DT - (A) MEETING PAPER ABSTRACT

IT - VELOCITY ANISOTROPY*; AMPLITUDE VERSUS OFFSET*; ANISOTROPY*; COMPARISON*; CONVERTED WAVE*; DATA PROCESSING*; ISOTROPY*; SEISMIC DATA PROCESSING*; SEISMIC VELOCITY*; SEISMIC WAVE PROPAGATION*; VELOCITY*; VELOCITY CONTRAST*; WAVE*; WAVE PHENOMENON*; WAVE PROPAGATION*; WAVE VELOCITY*; COMPRESSIONAL WAVE; ELASTIC WAVE; EQUATION; MATHEMATICS; MOVEOUT; REFLECTION (SEISMIC); TIME; TRAVEL TIME; VERTICAL VELOCITY

MH - VELOCITY ANISOTROPY*

CC - GEOPHYSICS

AB - For transverse isotropy with a vertical symmetry axis (TIV, or **polar anisotropy**), it is difficult to obtain the **vertical velocities** and build a velocity-depth model from reflection data without **borehole** or log information. New methods are presented for estimating the **vertical velocities** ((upsilon)p0 and (upsilon)s0) and anisotropic parameters ((epsilon) and (delta)) for a horizontally stratified TIV medium using both P-wave and P-SV converted-wave (PS-wave) data. This is achieved by deriving an accurate double-square-root (DSR) equation for PS-wave moveout. The DSR equation is valid for strong anisotropy and for an infinite spread length, and contains all 4 parameters responsible for P- and PS-wave propagation. For a short spread, the equation has an isotropic form with only 2 parameters while, for a medium-to-long spread, it can be reduced to a 3-parameter equation independent of the **vertical velocity** ratio. Utilizing these features, the 4 TIV parameters from P-wave and PS-wave moveout analysis can be determined. A minimum spread length with offset-depth ratio of 3.0 is required, which is readily available from modern multicomponent seafloor surveys. (Longer abstract available) (Original not available from T.U.)

PY - 1999

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5 / 6 TULSA - ©TULS

AN - 702301

TI - HIGH RESOLUTION DETERMINATION OF **SEISMIC POLAR**

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4 / 8 TULSA - ©TULS

AN - 630328

TI - **VELOCITY ANALYSIS** AND IMAGING IN **TRANSVERSELY ISOTROPIC MEDIA**: METHODOLOGY AND A CASE STUDY

AU - ALKHALIFAH, T; TSVANKIN, I; LARNER, K; OLDI, J

OS - COLORADO SCH MINES; CHEVRON OVERSEAS PETR INC

SO - LEADING EDGE V 15, NO 5, PP 371-378, MAY 1996 (10 REFS)

NU - ISSN 1070485X

LA - ENGLISH; (ENG)

IT - SEISMIC VELOCITY COMPUTATN*; ANISOTROPY*; CALCULATING*; DATA PROCESSING*; IMAGING*; INTERVAL VELOCITY*; ISOTROPY*; MATHEMATICS*; SEISMIC DATA PROCESSING*; SEISMIC VELOCITY*; SEISMIC WAVE PROPAGATION*; TRANSMISSION (SEISMIC)*; VELOCITY*; VELOCITY ANISOTROPY*; WAVE PHENOMENON*; WAVE PROPAGATION*; WAVE VELOCITY*; CHART; COMPRESSIONAL WAVE; COMPRESSIONAL WAVE VELOCIT; CROSS SECTION; DATA; DIP; DIP MOVEOUT; DIPPING BED; ELASTIC WAVE; EXPLORATION; FAULT (GEOLOGY); FAULT PLANE; GEOLOGIC STRUCTURE; GEOPHYSICAL DATA; GEOPHYSICAL EXPLORATION; GRADIENT; GRAPH; KINEMATICS; MECHANICS; MIGRATION; MIGRATION (SEISMIC); MOVEOUT; NORMAL MOVEOUT; PHASE VELOCITY; PROFILE; RAY PATH; REFLECTION (SEISMIC); REFLECTION PROFILE; SEISMIC DATA; SEISMIC EXPLORATION; SEISMIC PROFILE; SEISMIC REFLECTION METHOD; SEISMIC SECTION; SEISMIC WAVE PATH; STACKING (SEISMIC); STEEP DIP; TIME DEPTH DATA; VELOCITY GRADIENT; VELOCITY PROFILE; VERTICAL VELOCITY; WAVE; WAVE FRONT; WAVE PATTERN

MH - SEISMIC VELOCITY COMPUTATN*

CC - GEOPHYSICS

AB - For many years, the intricacies and complexities of how elastic waves propagate in anisotropic media (media in which velocity varies with direction of propagation) have been studied. Where the subsurface is anisotropic, and evidence increasingly suggests that anisotropy is rather pervasive, processing that makes the erroneous assumption of isotropy yields errors in seismic images and thus, interpretations. One of the anisotropy-related phenomena that was recognized more than a decade ago is that of misties in time-to-depth conversion caused by the difference between the stacking and vertical velocity in anisotropic media. Also, recently attracting attention are the difficulties experienced by conventional processing methods (i.e., those based on the assumption of isotropy) in imaging of dipping reflectors, such as fault planes, below transversely isotropic formations. A case study is described, representing a dramatic example of the inadequacy of conventional imaging methods in the presence of seismic anisotropy.

PY - 1996

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Patent Examiner's Toolkit

File : TULSA

SS	Results	
1	27	POLAR 2D ANISOTROP???
2	120052	SEISMIC OR BOREHOLE
3	24	1 AND 2
4	942	VERTICAL 3D VELOCIT???
5	6	3 AND 4
6	163	ACUTE 2D ANGLE
7	863	VERTICAL 2D VELOCIT???
8	1	1 AND 6
9	208	MOVEOUT 2D VELOCIT???
10	45	4 AND 9
11	9477	ANISOTROP????
12	43	10 AND 11
13	37911	BOREHOLE OR SONDE
14	3	12 AND 13
15	37	..INDEX /Aun THOMSEN, L A
16	2	1 AND 15
17	0	12 AND 15
18	4	HID
19	13	11 AND 15
20	112	..INDEX /AU DELLINGER
21	2	1 AND 20
22	24	11 AND 20
23	0	VELOCITY 1D ANALYSIS 3D TRANSVERSLY 1D ISOTROPIC
24	0	VELOCITY 2D ANALYSIS 3D TRANSVERSELY 1D ISTROPIC
25	13	VELOCITY 2D ANALYSIS 3D TRANSVERSELY
26	517	ISOTROPIC 1W MEDIA
27	8	25 AND 26
28	0	296 W 987
29	0	28 W DECEMBER
30	23	UKR 2W GEOPROSP 2W RES
31	285	NOVEMBER
32	0	30 AND 31
33	3	WEAK 1W ELASTIC 1W ANISOTROPY

Search statement 34

Go

Query/Command : his

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File : TULSA

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  2    120052  SEISMIC OR BOREHOLE
  3        24  1 AND   2
  4       942  VERTICAL 3D VELOCIT???
  5         6  3 AND   4
  6       163  ACUTE 2D ANGLE
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  8         1  1 AND   6
  9       208  MOVEOUT 2D VELOCIT???
 10        45  4 AND   9
 11      9477  ANISOTROP????
 12        43  10 AND  11
 13     37911  BOREHOLE OR SONDE
 14         3  12 AND  13
 15        37  ..INDEX /Aun
               THOMSEN, L A
 16         2  1 AND  15
 17         0  12 AND  15
 18         4  HID
 19        13  11 AND  15
 20       112  ..INDEX /AU
               DELLINGER
 21         2  1 AND  20
 22        24  11 AND  20
 23         0  VELOCITY 1D ANALYSIS 3D TRANSVERSLY 1D ISOTROPIC
 24         0  VELOCITY 2D ANALYSIS 3D TRANSVERSELY 1D ISTROPIC
 25        13  VELOCITY 2D ANALYSIS 3D TRANSVERSELY
 26       517  ISOTROPIC 1W MEDIA
 27         8  25 AND  26
 28         0  296 W 987
 29         0  28 W DECEMBER
 30        23  UKR 2W GEOPROSP 2W RES
 31       285  NOVEMBER
 32         0  30 AND  31

Search statement  33
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Query/Command : prt ss 30 1-23 fu

(DELTA) IS AN AWKWARD COMBINATION OF ELASTIC PARAMETERS,
A COMBINATION WHICH IS TOTALLY INDEPENDENT OF
HORIZONTAL VELOCITY AND WHICH MAY BE EITHER POSITIVE OR
NEGATIVE IN NATURAL CONTEXTS.

PY - 1986

Query/Command : stop hold

Session finished: 08 MAR 2004 Time 16:22:54

TULSA - Time in minutes : 9,19
The cost estimation below is based on Questel's
standard price list
Estimated cost : 11.48 USD
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Estimated cost : 36.00 USD
Cost estimated for the last database search : 47.48 USD
Estimated total session cost : 48.16 USD

QUESTEL - Time in minutes : 0,05
The cost estimation below is based on Questel's
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Estimated cost : 0.05 USD
Cost estimated for the last database search : 0.05 USD
Estimated total session cost : 48.21 USD

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